



PATENT  
Attorney Docket: 1094-32

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): Hildreth et al.

GROUP: 1764

SERIAL NO.: 10/660,065

EXAMINER: Thuan D. Dang

FILED: September 8, 2003

Dated: January 18, 2007

FOR: PROCESS FOR THE PRODUCTION OF ETHYLBENZENE FROM DILUTE  
ETHYLENE STREAMS

Mail Stop: AF  
Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

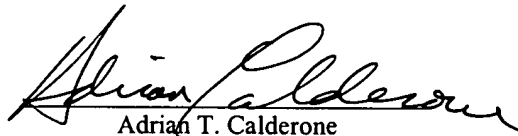
This Pre-Appeal Brief Request is submitted with a Notice of Appeal in response to the final Office Action dated October 18, 2006, in which Claims 1-18 have been finally rejected under 35 U.S.C. § 103(a) as being obvious over "admitted prior art" in view of U.S. Patent No. 5,602,290 (hereinafter "Fallon"). Review is requested because a *prima facie* case for obviousness has not been established.

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Certification under 37 C.F.R. §1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postpaid in an envelope, addressed to: Mail Stop: AF, Commissioner for Patents, PO Box 1450, Alexandria VA 22313-1450 on January 18, 2007.

Dated: January 18, 2006

  
Adrian T. Calderone

Claim 1 reads as follows:

1. In a process for the production of ethylbenzene from a dilute ethylene stream wherein an ethylene-containing stream derived from the cracking of a hydrocarbon feed is directed to an ethylene fractionator for separation of ethylene and ethane, an improvement comprising:

- a) providing the dilute ethylene stream by
  - i. liquefying and separating out a portion of the ethylene-containing stream prior to directing the remainder of the ethylene-containing stream to the ethylene fractionator, and/or by
  - ii. drawing off a side stream from the ethylene fractionator; and,
- b) directing said dilute ethylene stream as a feed to an alkylator for alkylation with benzene to produce ethylbenzene-containing effluent.

Pursuant to MPEP 2143, to establish a *prima facie* case for obviousness three criteria must be met:

(1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one skilled in the art to modify the references or to combine the reference teachings.

(2) There must be a reasonable expectation of success.

(3) The prior art references (or references when combined) must teach or suggest all of the claim limitations.

It is clear that at least criteria (1) and (3) have not been met.

Initially, Applicants submit that there is no suggestion in either Fallon or the "admitted prior art" to make the combination suggested in the Office Action. Fallon does not employ any fractionation of ethylene. The entire process is directed to the production of ethylbenzene. Hence, there is no incentive to one skilled in the art for its combination with the "admitted prior art".

Furthermore, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicants' disclosure. Indeed, the mere fact that references can be combined does not in itself constitute motivation for such combination.

Absent the use of Appellants' own disclosure, there is no reason why one skilled in the

art, upon reading Fallon, would be motivated to combine its teachings regarding the production of ethylbenzene with the teachings of the “admitted prior art.” Therefore, the obviousness rejection could only be the result of a hindsight view with the benefit of Appellants’ specification. This type of analysis is inappropriate:

To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction—an illogical and inappropriate process by which to determine patentability. The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made.” *Seasonics v. Aerosonic Corp.*, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996) (citations omitted).

In short, the combination advanced by the Examiner is not legally proper. Under the circumstances, Appellants submit that the Examiner has succumbed to the “strong temptation to rely on hindsight.” *Orthopedic Equipment Co. v. United States*, 702 F.2d 1005, 1012, 217 USPQ 193, 199 (Fed. Cir. 1983). However, “it is wrong to use the patent in suit as a guide through the maze of prior art references in the right way so as to achieve the result of the claim in suit. Monday morning quarterbacking is quite improper when resolving the question of non-obviousness.” *Id.* Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 and the rejection must be withdrawn.

But even if the combination suggested by Office Action were to be made, not all of the recited features of Claim 1 would be disclosed or suggested. Neither Fallon nor the “admitted prior art” disclose or suggest either:

- (1) separating a dilute ethylene stream into two parts and sending one part to an alkylator and the other to an ethylene fractionator; or
- (2) drawing off a side stream from the ethylene fractionator and sending it to the alkylator.

An important advantage of this process is the reduction of cost in the overall process since significant energy savings are achieved in the costly ethylene/ethane fractionation step by reducing the throughput while nevertheless obtaining a valuable byproduct (ethylbenzene) from the diverted dilute ethylene stream.

While the final Office Action argues that Fallon also reduces cost because it does not employ any fractionation, the argument misses the point. Applicants' process is an integrated process including both pure ethylene production and ethylbenzene production. The cost of the integrated process is optimized by the claimed method. This is something Fallon cannot achieve.

The Office Action states:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the admitted prior art by using a portion of the dilute ethylene stream before the ethylene/ethane fractionator and or from a draw-stream of the fractionator as the alkylating feed since such a feed containing ethylene and an acceptable amount of ethane can be used as the alkylating feed as taught by Fallon.

As neither of the cited references disclose (a) and (b) of Claim 1, the assertion of what "would have been obvious" presented in the Office Action is unfounded. If the Examiner is basing such an assertion on common knowledge, such a basis has been seasonably challenged by Applicants. Pursuant to MPEP 2144.03 Applicants have already requested that the Examiner provide evidentiary support for the assertion.

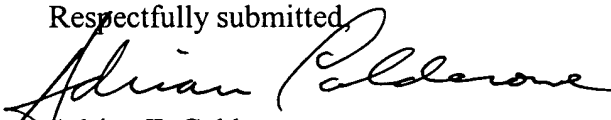
Accordingly, whether taken individually or in combination, the cited references neither disclose nor suggest the invention as claimed.

In conclusion, the final rejection does not present a *prima facie* case for obviousness. Claims 1-18 are submitted to be in condition for allowance, the same being respectfully requested.

The listing of reasons herein for requesting a pre-appeal brief review is not intended to preclude Applicants from presenting further or different reasons for patentability in a subsequent appeal or further prosecution of this application.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 04-1121. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Adrian T. Calderone". The signature is fluid and cursive, with the first name "Adrian" being more prominent.

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